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RADER FISHMAN & GRAUER PLLC LION BUILDING 1233 20TH STREET N.W., SUITE 501 WASHINGTON, DC 20036				
			EXAMINER BRUENJES, CHRISTOPHER P	
			ART UNIT 1772	PAPER NUMBER

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**BEFORE THE BOARD OF PATENT APPEALS  
AND INTERFERENCES**

Application Number: 10/691,583  
Filing Date: October 24, 2003  
Appellant(s): YANADORI, KAZUHITO

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Brian K. Dutton  
For Appellant

**EXAMINER'S ANSWER**

This is in response to the appeal brief filed  
August 29, 2006 appealing from the Office action mailed March  
30, 2006.

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**(1) Real Party in Interest**

A statement identifying by name the real party in interest is contained in the brief.

**(2) Related Appeals and Interferences**

The examiner is not aware of any related appeals, interferences, or judicial proceedings which will directly affect or be directly affected by or have a bearing on the Board's decision in the pending appeal.

**(3) Status of Claims**

The statement of the status of claims contained in the brief is correct.

**(4) Status of Amendments After Final**

No amendment after final has been filed.

**(5) Summary of Claimed Subject Matter**

The summary of claimed subject matter contained in the brief is correct.

**(6) Grounds of Rejection to be Reviewed on Appeal**

The appellant's statement of the grounds of rejection to be reviewed on appeal is correct.

**(7) Claims Appendix**

The copy of the appealed claims contained in the Appendix to the brief is correct.

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**(8) Evidence Relied Upon**

3,011,525	RANDLE et al.	12-1961
5,660,210	IKEDA et al.	8-1997
5,371,153	KURIBAYASHI et al.	12-1994

**(9) Grounds of Rejection**

The following ground(s) of rejection are applicable to the appealed claims:

***Claim Rejections - 35 USC § 103***

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

The factual inquiries set forth in *Graham v. John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

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Claims 1-4 and 6 are rejected under 35 U.S.C. 103(a) as being unpatentable over Randle et al (USPN 3,011,525) in view of Ikeda et al (USPN 5,660,210).

Randle et al teach a hose comprising an inner rubber layer (reference number 5, Figure 1), an outer rubber layer (reference number 10, Figure 1), at least two reinforcing layers (reference numbers 7 and 9, Figure 1) inserted between the inner and outer rubber layers, and an intermediate rubber layer (reference number 8, Figure 1) interposed between the adjacent reinforcing layers. The reinforcing layers are composed of twisted cords of organic fibers, wherein the twisted cords have 6 turns per inch (col.3, 1.10-12), which is within the range of 15 to 30 turns per 10cm. Regarding claim 3, the fibers are made of polyester fibers (col.3, 1.10). Regarding claim 4, the twisted cords have a single-twist structure. Regarding claim 6, the reinforcing layers are formed by braids of the twisted cords (col.2, 1.58-60). Note the limitation "power steering hose" is a functional limitation within the preamble and receives little patentable weight. The body of the claim provides the structure of the hose and whether the hose is used as a power steering hose or a hydraulic braking hose is not germane to the patentability of the article because it is merely an intended use.

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Randle et al fail to teach the intermediate elongation at 0.85cN/dtex or the elongation at break of the twisted cords. However, Ikeda et al teach that when forming a hose having a similar structure of two reinforcing layers made from polyester thread positioned within inner, outer and intermediate rubber layers the elongation of the polyester thread at break is set at about 10% (col.2, 1.44-45). Ikeda et al further teach that the elongation values of the threads forming the reinforcing layers of the rubber hoses having the structure similar to Randle et al are important and are optimized based on the desired physical properties of the final article. In particular, when the elongation at break is increased the fatigue resistance is increased and the intermediate elongation is increased. The increase in intermediate elongation leads to larger volume expansion (col.2, 1.44-67). Therefore, it would have been obvious to one having ordinary skill in the art at the time Applicant's invention was made to realize that Ikeda et al and Randle et al are analogous insofar as both are concerned with fiber reinforced rubber hoses and that the elongation values of the threads or cords forming the reinforcing layers of fiber reinforced rubber hoses are optimized based on the desired volume expansion, fatigue resistance, and tensile strength desired, as taught by Ikeda et al, and that an elongation at

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break of about 10% is well known in the art of fiber reinforced rubber hoses, as taught by Ikeda et al.

Thus, it would have been obvious to one having ordinary skill in the art at the time Applicant's invention was made to select the optimum elongation at break and intermediate elongation value at 0.85cN/dtex within the claimed ranges depending on the intended end result of the hose with regards to volume expansion, fatigue resistance, and tensile strength, as taught by Ikeda et al.

Claims 5 and 7 are rejected under 35 U.S.C. 103(a) as being unpatentable over Randle et al in view of Ikeda et al as applied to claims 1-3 above, and further in view of Kuribayashi et al (USPN 5,371,153).

Randle et al and Ikeda et al taken as a whole teach all that is claimed in claims 1-3 and teach that the reinforcing layers are formed by braids of the twisted cords (col.2, 1.58-60 of Randle et al). Randle et al and Ikeda et al fail to teach that the twisted cords have a double-twist structure. However, Inada et al teach reinforcing fiber layers for rubber hose reinforcement formed of twisted organic fibers (col.1, 1.8-13 and col.2, 1.46-50) and teaches that these twisted organic fibers are formed into double-twist structures (col.5, 1.1-3) in

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which a plurality of primary twisted cords are twisted together with final twists in a same twist direction of the primary twisted cords. One of ordinary skill in the art would have recognized that the references are analogous insofar as all three references are concerned with fiber reinforcement layers used in the formation of rubber hoses.

Therefore it would have been obvious to one having ordinary skill in the art at the time Applicant's invention was made to select a double-twist structure as the twisted cords of Randle et al and Ikeda et al depending on the intended end result of the hose since double-twist structures are used as twisted cords in formation of braided reinforcement layers for rubber hoses, as taught by Kuribayashi et al.

#### **(10) Response to Argument**

##### **A. Claims 1-4 and 6**

Appellant argues that Randle fails to contain a reference to a power steering hose. Appellants further argue that Randle and Ikeda combined fail to teach the claimed intermediate elongation at 0.85cN/dtex. Appellants also argue that Ikeda fails to teach a number of twists as claimed.

In response to Appellant's argument that Randle fails to contain a reference to a power steering hose, articles are defined by structure not what the article is used for. As long



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as the hose of Randle in combination with Ikeda meet the structural limitations of the claimed hose, then the claim is unpatentable regardless of whether the references specifically state that the hose is being used as a power steering hose.

In response to Appellant's argument that Randle and Ikeda combined fail to teach the claimed intermediate elongation at 0.85cN/dtex, the teachings taken as a whole would lead one of ordinary skill in the art to use twisted cords having the claimed intermediate elongation. Ikeda et al teach that the threads are optimized with regard to elongation based on the desired end properties of the final article. In particular, Ikeda et al teach that when the elongation at break is decreased fatigue resistance decreases and when elongation at break increases tensile strength decreases. In the same manner, Ikeda et al teach that when an intermediate elongation value is increased the hose exhibits a larger volume expansion and when it is decreased the tensile strength decreases (col.2, 1.44 - col.3, 1.5). Therefore, it would have been obvious to one having ordinary skill in the art that depending on the intended properties of the finished hose, the elongation values of the reinforcement cords would be optimized to arrive at the desired results, as taught by Ikeda et al.

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In response to Appellant's argument that Ikeda fails to teach the claimed number of twists, Randle and Ikeda must be read as a whole. Randle teaches the number of twists claimed and Ikeda being silent about the number of twists does not change the number of twists taught in Randle when combined, because the twisted cords of Ikeda are not being substituted for the twisted cords of Randle. The teachings of Ikeda provide evidence that the elongation values of the twisted cords of Randle would be optimized depending on the intended end result of the hose.

B. Claims 5 and 7

Appellant argues that Kuribayashi fails to teach the claimed elongation values or number of twists. Appellant further argues that Kuribayashi fails to teach twisted cords having a double-twist structure.

In response to Appellant's argument that Kuribayashi fail to disclose the elongation values and number of twists in claim 1, Randle, Ikeda, and Kuribayashi must be read as a whole. Randle and Ikeda teach the elongation values and number of twists claimed as shown above, and the double twisted cords of Kuribayashi are not being substituted for the twisted cords of Randle. The teachings of Kuribayashi provide evidence that

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twisted cords used as reinforcement in rubber hoses are formed with double-twist structure.

In response to Applicant's argument that twisted cords having a double-twist structure are absent from within Kuribayashi, Kuribayashi teach double-twist structure twisted cords in example 1 in column 5. Therefore since the knowledge of the prior art is gleaned from Kuribayashi and not the Examiner's own knowledge an Examiner's affidavit is not required.

**(11) Related Proceeding(s) Appendix**

No decision rendered by a court or the Board is identified by the examiner in the Related Appeals and Interferences section of this examiner's answer.

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For the above reasons, it is believed that the rejections should be sustained.

Respectfully submitted,

Christopher P Bruenjes  
Art Unit 1772

CPB  
October 7, 2006

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